REPORT OF THE LVIF GENDER WORKING GROUP ON LIVESTOCK VACCINE VALUE CHAIN

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1.Background

The Livestock Vaccines Innovation Fund (LVIF) is a new Canada's International Development Research Centre (IDRC)program that started in 2015. It is an initiative developed by the Bill & Melinda Gates Foundation, Global Affairs Canada, and IDRC. It represents a joint investment of CAD 57 million over 7 years to support the development, production and commercialization of innovative vaccines against livestock diseases in sub-Saharan Africa, South and South East Asia.

Several studies have shown that, improved technologies have not always reached women and even when they do, the extent to which they can utilize these technologies to improve their lives can be hampered by gender and social barriers.

Two scoping studies were conducted in Sub-Sahara Africa (SSA), South and South East Asia to gather more current information on the vaccine landscape from the field. The objective was to inform the design of research projects that targeting specific geographies and livestock diseases for maximum impact on women and men smallholder livestock farmers (SLF). The scoping studies, information from previous LVIF studies and that from other sources have illustratedlow vaccine adoption rates by women despite women's willingness to pay reasonable market rates for effective vaccines if available. Gender inequalities continue to hinder productivity of agricultural and livestock systems and hamper the empowerment of women and their ability to access resources and benefit from research and development programs.

LVIF aims to address these gender and social barriers by developing a set of projects that have the multiple benefits of increasing productivity, improving food security and empowering women engaged in livestock value chains. The program will take a value chain approach and include all aspects of vaccine manufacturing, sustainable distribution, awareness creation, training, microfinancing, business development support services, vaccine adoption and utilization that ensures inclusion of women as product and/or service providers and end-users.

Previous livestock vaccines projects have mainly focused on the technical aspects of vaccine development, distribution and adoption, and when gender issues have been integrated, these have been marginal, for example to understand women's perceptions or their adoption rates for the new vaccines. LVIF is seeking to have gender as an entry point and fund research that

generates new evidence on how women can be better empowered to participate and benefit from the vaccines value chain in targeted countries.

Key anticipated outcomes of this research include;

1. Increased awareness of and reach of vaccines to women smallholder livestock farmers in targeted countries.
2. Increased capacity of women smallholder farmers to utilize and benefit from vaccines to improve livestock productivity.
3. Greater participation and benefits from vaccines by women through addressing the technical, business, gender and social barriers that impede participation and benefit sharing by women along the vaccines value chain.
4. Greater empowerment of women (including increased decision making, control over resources, voice and representation), the development, delivery and use of vaccines
5. Changes in the gender, social and cultural norms that create barriers for women in owning and using livestock, participating in and benefiting from the livestock vaccines value chain, and utilizing vaccines to improve the productivity of their livestock

2. Method

In order to identify the key research gaps and a set of projects that will have the most impact, LVIF convened a Working Group of mainly gender experts with experience and skills in the agriculture and specifically the livestock sector to help shape the research agenda.The Working Group interacted and held their meetings virtually using an online platform, Microsoft Teams®, which allowed both virtual meetings and documentation of the discussions.

The discussions were organised according to the following sessions:

1.1. Identify research gaps and key research priorities for gender research in the livestock vaccines value chain

1.2. To recommend potential types of projects that would lead to benefits for women from livestock vaccines and their empowerment to participate in and benefit from different nodes of the vaccine value chain

1.3. To identify and recommend priority conditions (including design principles) to be included in the call for proposals for potential projects in order for these projects to lead to desired outcomes

1.4. To identify relevant stakeholders including individuals and organizations that have the potential, skills and expertise to conduct the types of research identified under 1.1 and 1.2.

3. **Discussion Outputs**

The discussions were held over a period of three weeks. Eleven people actively participated in the discussion and raised several issues under the themes of discussion. The discussions are compiled under the themes below:

3.1 Research gaps and key research priorities

Discussions around this theme centered on several key topics namely: knowledge/training; policy; communication/dissemination of information; technology; drivers of adoption/non-adoption; innovative approaches.

Knowledge/Training: Issues raised around this focused at both the macro and the micro level. At the micro level which would relate to the community, household and individual/farmer level, the discussion centred on aspects of training of technologies/vaccines which were considered to be within the purview of men. Gender norms about men's control of technology, information and knowledge were seen to limit women's opportunities to learn, use and benefit from vaccines as well as modern technologies.

Questions on this issue need to focus on women's education, their level of understanding on animal vaccines and attitudes towards vaccines/technology as well as other primary animal health care practices.In relation to trainings, mobility related constraints were noted as possible hindrances to women attending technology/vaccine education forums.

Training in animal health and marketing of products were reported as bottlenecks to vaccine adoption by resource-poor women who are in transition from subsistence to commercial production (and who should be the target of vaccine-based project work since efforts to reach them will also reach more affluent users). Marketing vaccines simply as commodities to women and men livestock producers who do not already have the basis for animal health or disease is not likely to succeed, and worse, misses a key opportunity to impart skills for the future.

Equally important and most often missed is the link between vaccines and gendered knowledge of disease. There are many livestock vaccines, and some are curative and some preventive. Key

questions of importance are: How do they actually fit within the way women see livestock and diseases? What knowledge do women really have about diseases? It is said that women take care of livestock but ever since some initial discussions on ethnoveterinary medicine, detailed exploration as to what sort of knowledge there is out there and how it fits with what, how and when the vaccines are used and how they are presented, is lacking. In relation to this there is a research gap on the current practices, extent of vaccine use and knowledge and attitudes of women farmers to vaccines and other primary health care practices.

Assessment of knowledge and training was not only limited to the micro level. At the macro level, the issue revolved around women scientists in agricultural/veterinary training institutions. Given that these are the same scientists who would rise up to be in positions of technology/vaccine development, if they are either not enrolling in these institutions, or dropping out of these institutions before they reach the top levels, there is need to establish the barriers and challenges, to their enrolment in these institutions, completion of the courses and to their engagement in practice after completion.

There is a gap in studies in relation to women extension workers. There isneed to explore the incentives that may exist to mitigate gender related constraints particularly for women to execute their duties as livestock extension officers. This is because there are very few women extension officers, a fact that could possibly explain why there is a protracted gender gap in the animal vaccine utilization.

Policy: Related to the training topic is the issue of favourable policy environment by agricultural/veterinary training institutions that promote women's enrolment in livestock related courses such as veterinary medicine. One such policy in the institutions of higher learning is the admission of women students to such courses by slightly lower marks than their male counterparts as part of the affirmative action. However, there is need to explore the existence of other relevant policies and whether they have been effective, the challenges faced in implementing these policies and what more needs to be done at the macro level.

Communication/Dissemination of information: Effective communication is one of the key elements in adoption of technology but gaps exist in relation to the following key questions: Is the communication on livestock vaccines effective in relation to messaging, language and mode of delivery? Is it reaching all the target populations? Is the messaging understandable to the target population? How best should communication about livestock vaccines be conveyed and what is the appropriate timing to enable many women attend the sessions? Discussions were focused on the need to have women as targets for livestock related vaccine training through consulting them to understand the best time/place that suits them for meaningful participation. Communications strategies need to embrace artistic illustrations to accommodate different literacy and understanding levels of women and men.

Technology: From the technology point of view, a research gap that exists is in relation to the packaging of the vaccine, and dosage- identification of the vaccines that can be delivered in smaller doses that are easier to sell and reduces the complications of rounding up larger numbers of animals, making them more available to women.

Barriers to adoption/non-adoption of vaccine/animal health care practices:***Access barriers:***Lack of access to tools was reported to apply on many fronts. For practising women extension workers, lack of access to tools and aids that make the job, less laborious e.g in restraining large animals or handling them without crushes still make them reliant on men hence this is a gap in service provision. Lack of access to tools also applied at the farm level. For example, if there is no crush to facilitate safe handling of animals, women farmers can be constrained in their effort to deal with animals in the case of for example provision of treatment. For those in private practice, lack of access to finance or credit may slow their progress. There is need to further investigate whether the aspect of access to tools is an issue of lack of means/capital to access them or an issue of unavailability of appropriate tools for use by women extension workers or if it is an issue of both.

Social and cultural barriers: Discussions revealed that limited research has been carried out on gender and vaccines. This field is largely unexplored hence a key gap that needs to be addressed is the understanding of vaccine uptake at the national and household levels.

At the national level, discussions revealed the need to explore challenges faced by national and regional/county governments in procurement and delivery of vaccines for notifiable diseases to community members and how these challenges affect vaccine access for the farmer. This is because there are certain vaccines which a farmer may be able to purchase for themselves while there are others that are preferably channelled through the decentaralised or local government veterinary offices. Of importance at the farmer level would be the question, what are the drivers of gendered adoption of primary animal health care practices, particularly veterinary vaccines?

Critical decisions on adoption or non-adoption of vaccines/ technologies are made at the household level. It is also the sphere in which socio-economic factors that affect uptake of technology come into play. In terms of decision making, there is a need to develop or improve on the existing tools/instruments that can be used to explore more nuanced information around decision making and vaccines. Existing tools have a short comings when asking questions around decision making, i.e. who makes the decision about buying vaccines, and in most cases, due to gender norms, people will say the men, but there is more to a decision making around vaccines and animal health issues.

Linked to the above, more research needs to be done about vaccine uptake and benefits. Who in the household benefits from livestock vaccines? What are the differences by species? What is the link between gender, vaccines and short cycle animals? An entry point would also be to look at the whole household economy and where vaccines fit within this.

Innovative approaches: A key research gap raised under this sub-topic was about the best interventions to bring about women's empowerment. This is not limited to vaccine related projects, but all of the research shows that women have fewer assets and less decision-making authority compared to men, and that simply earning more income does not automatically translate into controlling it. So for women to make informed decisions about their livestock, they need to have more decision-making ability, which requires the support of the men. Key questions that arose around this were: There are some good models of community-based gender equality workshops but who will fund them? Which are the best ones to use if funding is obtained? What are the obstacles to including gender equality as a component of livestock

extension? (This could be linked to obstacles in bringing livestock extension to all remote areas, as a development objective). What are the risks and potential synergy between household health care practices and livestock primary animal health care including involvement of women in both? What are the innovative ways through which women livestock farmers access livestock primary health care services?

Besides the social barriers, a research gap raised was in relation to identification and exploration of the possible economic opportunities along the livestock vaccine value chain. Mapping out the livestock value chain and pointing out possible economic opportunities along the chain will encourage participation of women.

Using an approach that links the technology to business can make the uptake of the vaccines/technology more attractive to the farmers.Linking it to business, is important because it enables a better understanding from a gender perspective on when it is worth investing in vaccines. Key questions to ask include: When does livestock become a business for women? When do a few chickens become an enterprise (in Kenya, ILRI's research shows at 200 chickens), and what are the capabilities needed to make livestock a profitable business for women and does this include using and being capable of deciding around vaccines, and what about other issues such as bio-security etc? As important, is also the question on which women will be interested in making it into a business? At what point in their life cycle?

Development of a gendered prioritization tool was noted as worthy of consideration in the bid to reduce gender and social barriers in livestock vaccine value chain.It was noted that some work has been done on prioritization of diseases, which has informed vaccine programs. (Perry & Grace, 2009), it would be worth looking at how the disease prioritization matrices where developed, and whether it would be possible to develop a gendered prioritization of diseases (including those for which we have vaccines).

3.2 Types of projects for women empowerment

To deal with the issue of training on vaccines and their importance, a useful entry point for the subject of livestock vaccination would be through poultry vaccination – specifically against Newcastle Disease (NCD). Majority of rural women raise backyard poultry (up to hundreds of birds in some households) and almost every poultry farmer has experienced one or more NCD

outbreaks and appreciate the importance of vaccination against NCD. An explanation of how the NCD vaccine works would suffice as an explanation of how all vaccines work. Information on the duration of immunity conferred by different vaccines to immunized livestock can be confusing. Protection from vaccinations ranges from a few months to a lifetime. Some diseases are vaccinated once in lifetime, others every three years, annually, every six months and so on. Explaining these variations in protection by vaccines for women might be made easier by the fact most mothers are knowledgeable about children vaccines and their varying frequencies of (repeat) administrations. Drawing parallels between child and livestock vaccinations, and using them both in training might accelerate the increase in understanding of vaccines in general and livestock vaccines in particular.

An economic opportunity that has encouraged participation of women in the livestock value chain is artificial insemination. Artificial insemination has managed to attract women participation even in areas it was never thought of: the main motivation was the attribution of economic empowerment strategies that enhances capacity building and community awareness. Such kind of projects would empower women to participate and benefit from the livestock vaccine value chain.

A discussant indicated that instead of referring to the chain as a livestock vaccine value chain, she would refer to it as a supply chain since all value is added at production and the rest is a distribution of different quantities of a finished product. It was further noted that there are steps in the supply chain – distributor, wholesaler, retailer/vaccinator and end consumer. Like for almost every commodity, women market actors are crowded at the consumer level. This being a commercial venture, skills and capital to start and sustain competitive business are required. A highlight indicated that women community vaccinators (Bangladesh) are already vaccine retailers. A possible project would be to encourage and support an association of vaccinator women retailers – to strengthen their agency and enhance their technical skills and financial capacity (access to fair credit) in order to enable them access the vaccine market as wholesalers and eventually as distributors. It was suggested that this intervention be piloted in Bangladesh and scaled out elsewhere. This is because women vaccinators in Bangladesh are already mobilized, use vaccines and are involved in vaccine retail business.

Potential types of projects include those that entail,KAP studies around livestock vaccines, including monitoring impact of various vaccination strategies Key research questions that would help address the issue of women empowerment to participate and benefit from different nodes of the livestock vaccine value chain include: What is the role of men, women and youth in livestock production, disease prevention and control design to consider perspective of diverse communities? How do decision making powers by women affect adoption of livestock vaccination?

Weaknesses and strengths of existing projects:

Experiences from India and Nepal were shared to highlight the weaknesses and strengths of existing projects, and suggest possible best practices that can be emulated. In India and Nepal most livestock projects have a weak health component as health care is a public function. However more often public services don't reach remote or smallholder farmers. Extension is completely missing and most projects fail to give enough attention to it. Moreover, women livestock keepers do not look at the economics of rearing and at times invest more than they profit. Marketing is also not considered within the project and that is weakest link. On a positive side- Women community animal health workers (CAHWs) trained in various projects have been found to be proactive and have been instrumental in control of diseases like Newcastle disease and Peste de petits Ruminants (PPR) in goats. Large ruminants are not covered by them due to policy issues beyond the current scope of this discussion. Vaccines of quality are available but distribution needs to penetrate rural market.

Challenges hindering the distribution of vaccines to rural markets were found to be multi-fold. Private distributors were reported not to see smallholder wo/men farmers as a lucrative market and preferred to go to big farmers closer to roads. Secondly, since there is no awareness among farmers about vaccines and how it can save their animals, there is no demand. Thirdly, preventive health care is a public function, sporadic vaccination drives by animal health departments disrupts the NGOsled private sector investment in reaching vaccines to small holder wo/men farmers. Fourthly, there is lack of appropriate doses per vial suitable for small number of poultry and livestock kept by smallholder farmers which creates problems for CAHWS in dispensing the vaccines.

Proposed additional types of projects to benefit and empower women were:

- Projects on livestock production with a training component on disease prevention and control;
- Projects on livestock vaccine uptake focusing on adoption, dis-adoption and non-adoption. This project would be related to technology/vaccine adoption and would focus on 3 categories of farmers: those who are introduced to vaccines and stick to their use (adopters), those who adopt the vaccines for a short while and then stop their use (dis-adopters) and those who despite being given all opportunity decline to take up the vaccines (non-adopters);
- Projects studying intra-household decision making around vaccine uptake;
- Vaccines that work in both large and small stock- women often have more control of income from small stock;
- Projects that have a strong element of capacity development for primary animal health care and community engagement;
- Projects with gender transformation activities along the livestock value chain, vaccine distribution chain and particularly for primary animal health care services;
- Modelling food security, food safety and poverty alleviation benefits of livestock vaccines in different livestock systems and at a macro-economic level;
- Market studies and willingness to pay for proposed vaccine products;
- Modelling productivity/economic gains from alternative control and prevention strategies for livestock disease;
- Exploratory studies for developing sustainable local livestock vaccine systems;

The projects should specifically focus on vaccine sourcing, maintenance of cold chains/vaccine viability while in transit, preparation of vaccines, administration of vaccines, and barriers to vaccine uptake such as cost, vaccine side effects and socio-cultural beliefs against vaccines.

3.3 Priority conditions in call for proposals

An opening discussion question around this theme was, *"We have had a lot of projects that integrate gender but are led by biophysical scientists, with research questions more oriented to the biophysical elements of the research. Should a key requirement here be that projects are led by gender researchers? What other design elements would put more focus on the gender issues and make them central to the research?"*

The discussants stressed that gender researchers and biophysical scientists need to sit together to come up with the appropriate research questions. Both have important roles to play in designing of the project. To take it a step further, it would be necessary to include sensitization of policy/decision makers regarding the project to get their cooperation and buy-in. This is important for post project sustainability especially in South Asian context as well as other contexts. Vaccine manufacturers were also noted as a key stakeholder. It would be important to take them for a field trip to see and understand their end-users to enable them come up with products that meet their needs.

It was noted as crucial to have gender experts who understand livestock and small holder systems, because providing ways forward will require a broader understanding of gender issues in livestock and in smallholder systems. The discussants were in agreement for the need to create a healthy respect for each other. This point on ensuring that real gender experts are recruited for these projects was stressed in this statement, "*we also need to make sure that we do not get technical people to think they are gender experts, and thus we end up with bad gender research"*. However, it is equally crucial for the biophysical researchers to participate in gender training early in the research project, the bench scientists should have to conduct interviews with anticipated female and male end-users, to give context to their place in the entire project. One discussant summed it up, *"I have found that they enjoy time in the field, and appreciate learning about that mysterious jargon word "gender," and can become stronger team members. The days when the "gender expert" is the only one looking at gender dynamics must end.*

A mandatory requirement for the projects should be a comprehensive theory of change demonstrating how the anticipated outcomes will be realized through the proposed

intervention. At the design stage, data collection processes should be gender mainstreamed to minimize bias related to gender.

Additional suggestions included the following, that the project must start with an analysis of the policy landscape to identify context specific challenges that potentially hinder scaling up and uptake of vaccine innovations- this will allow the research teams adequate time to prepare for the scaling up of the innovation and identify entry points for policy dialogue and advocacy. Involvement of the private sector or commercial vaccine producers is key from the start- these should be partners who voluntarily commit to work together. Integration of gender and a value chain approach to vaccine development need to be made one of the priority requirements in the call for proposals. Applicants need to include letters of support from the relevant government department indicating that development of the proposed vaccine is permissible within the country(ies) & that the targeted diseases are of priority for smallholder agricultural development. There is need to ensure that the gender research is organised in a way that women can meaningfully participate. Data collection should be dome when women are available at home so that their responses/views are captured, single-sex focus group discussions need to be conducted, not forgetting recruitment of an equal number of women and men enumerators.

3.4 Relevant stakeholders

Organisations that work through organised farmer groups would be good entry points in the countries where they work. An example is Heifer International. However, there was consensus that multidisciplinary collaborative research among the various relevant institutions and organisations was key but the lead should be an academic institution of higher learning or a relevant research institution(s). Involving relevant university departments would help create sensitization of students about gender needs. Relevant organisations would be the

- Institutions of learning; universities,
- Research Institutions; both national and international
- Vaccine development/production organisations,
- County governments
- Relevant ministries and departments of Agriculture/Livestock,

- Agricultural financing Institutions
- Development partners; NGOs working on livestock related matters.

All these should be organisations that have previous track record of successful collaborative research and stakeholder engagement as well as established linkages with potential partners along the vaccine value chain

Key organisations to consider are the World Organization for animal health (OIE), who set the standards for animal health, and the Food and Agriculture Organization of the United Nations (FAO) as they have a much stronger engagement with not only the private sector but also the public sector. Specifically, FAO is often in charge of large vaccine campaigns.

A case study of Bangladesh women*:* Bangladesh communities with operational women vaccinators seem to be an ideal starting point for research identified. They are already mobilized, vaccinating and involved in vaccine retail business. Increasing their knowledge on vaccines can be implemented systematically among the vaccinator women groups as part of their capacity enhancement to participate in business in wholesale and distributorship of vaccines.

For all other communities without women vaccinators, women from these communities could be mobilized and trained as village livestock vaccinators as in Bangladesh. Then after they demonstrate promise as vaccinators retailing vaccines, their business and other relevant capacities could be enhanced so that they get engaged in other levels/ nodes of the supply chain. Mobilizing women vaccinators could be tried in transhumant pastoral communities in Eastern and horn of Africa – Oromo (Ethiopia and Kenya), Somali (Somalia, Djibouti, Ethiopia), Maasai (Kenya and Tanzania) and Samburu and Kalenjin (Kenya). This is because it makes economic sense to vaccinate large herds; these communities keep large numbers of multiple livestock species; often, women take care of livestock and have an understanding of diseases and their contextual characteristics; most women are entrepreneurial and could be willing to be trained as livestock vaccinators as a livelihood diversification option.

4. Recommendations

To enable LVIF have gender as an entry point and fund research that generates new evidence on how women can be better empowered to participate and benefit from livestock value chains

generally and vaccine distribution chains in particular in targeted countries,the following are recommended as possible key areas of focus in the preparation of the call for project proposals:

4.1 Key focus areas for the call Terms of Reference (TOR) 1 & 2

1. **Addressing the social, economic and cultural constraints to women's use and benefits from vaccines**

Research under this theme could focus on: understanding the social, economic and cultural constraints and opportunities for women to use and benefit from vaccines; developing new tools and methods to better obtain data on social and cultural constraints to women's use and benefits from vaccines; use of innovative approaches for addressing social, economic and cultural constraints; testing incentives (including market incentives) for improving household and women's decision making on vaccine use.

2. **Improving disease and vaccine knowledge and understanding how it affects vaccine use and benefits**

Research under this theme could focus on: understanding the current levels of disease knowledge and vaccine knowledge especially amongst women and how this affects their use of vaccines; how women and men view diseases differently and how that impacts their use of vaccines; testing what approaches work for improving vaccine knowledge amongst women; understanding trade-offs between vaccination and treatment and how this differs between men and women.

3. **Gender mapping and identifying opportunities for women along the vaccines supply chain**

Research under this theme could focus on: gender mapping of the vaccines supply chain in specific countries to identify gender based opportunities and barriers for women; identify key entry points for women in the vaccines supply chain beyond the farm; test different business models to support women's entry and participation in different nodes of the vaccine supply chain.

4. **Understanding current use and benefits from vaccines**

Research under this theme will focus on current use and benefits of vaccines to understand: current levels of vaccine use amongst women and men; women's decision making in vaccine adoption and use; how vaccine use and women's decision making varies across species, diseases and geographies; how decision making and benefits from vaccines is influenced by other factors; approaches for increasing women's decision making at household level; women's perceptions of the benefits they derive from vaccines.

5. **Understand and addressing barriers and opportunities for women livestock health and extension workers**

Research under this theme could focus on: understanding the links between women livestock owners and women's access to and use of vaccines; how to best promote, support and organise women animal health extension workers across different contexts; approaches for improving women's enrolment in veterinary schools.

6. **Tools and Metrics**

Research under this theme could focus on developing new metrics for prioritising diseases that integrate gender considerations.

7. **Addressing supply side barriers to vaccine adoption by women**

4.2 Key focus areas for the call under TOR 3

1. **Requirements/qualification of team:** A key priority aspect that needs to be included in the conditions for the call is that the lead researcher should be someone with a strong gender background/experience preferably in livestock and small holder systems; the team composition should be multi-disciplinary and multi-institutional.
2. Throughout the **project cycle,** there is need to take into consideration the following:
    - Issues of gender to be integrated throughout the project cycle;
    - Inclusion of a comprehensive theory of change demonstrating how the anticipated outcomes will be realized throughout the project intervention and how it will benefit women;

- Deliberate focus/target on/of women at each stage of the value chains- farmers; extensionists; drug stockists; distributors/sellers; service providers, vaccinators, scientists including those involved in vaccine development;
- Inclusion of training component on gender for all research team members, training component on vaccine use and importance targeting women farmers engaged in livestock production;
- Involvement of private sector and commercial vaccine producers from the onset of the project to enable them appreciate the needs of the women livestock farmers in relation to animal health products including vaccines and develop products appropriate for them.
- Inclusion of policy/decision makers from the beginning of the project.

3. **Methodology:** Data collection processes that minimize data bias in relation to gender; utilization of mixed methods from the beginning to the end including the monitoring and evaluation exercises that focus on gender; focus on intra-household survey instead of household surveys; use of randomized control trials to test vaccine adoption; analysis of the policy landscape and architecture from a gender lens.
4. **Project design:** Inclusion of projects focusing on prevention of livestock diseases of great economic and health importance for dominant livestock species kept/owned by women to be given key priority; Inclusion of experiential learning through field trips especially for scientists involved in vaccine manufacturing to see and understand their end-users to enable development/modification of products that suit women farmers.

4.3 Key focus area for the call TOR 4

There is need to have collaborative and multidisciplinary, multi-institutional research teams from relevant institutions or organisations but these needs to be led by academic (universities) or research institutions. Key organisations/institutions that are important in research projects on gender and livestock vaccine value chain include:

- Research institutions focused on livestock production and vaccine projects;
- Academic institutions/Universities;

- Tertiary institutions offering animal health management courses on animal health and production;
- Development institutions implementing livestock production project: they work through organized farmer groups hence could be good entry points where they work;
- Agricultural financing institutions focused on livestock assets;
- Relevant farmer groups and women groups: Good entry points to the community and may already have existing projects that can be improved/boosted;
- County governments and programs on distribution of livestock assets to community members;
- OIE: Setters of standards for animal health;
- FAO: Coordination of global livestock disease control efforts
- Public and private sector: This group are often in charge of large vaccine campaigns.

Identification of these stakeholders should focus on some requirements such as:

- Organisations that have previous track record of successful research on gender and or engagement or development of other livestock vaccines and established linkages with potential partners along the vaccine value chain/ engagement in other relevant research;
- Researchers with a track record for successful multidisciplinary collaboration and stakeholder engagement capabilities including focusing on gender issues.

5. Bibliography

Brian P and Grace D (20090. The impacts of livestock diseases and their control on growth and development processes that are pro-poor. Philosophical Transaction for the Royal Society of London B: Biological Sciences 364.1530 (2009):2643-2655

Livestock Vaccine Innovation Fund Scoping Study: SSA: Delivering Vaccines Safely and Affordably to Smallholder Farmers in Sub-Saharan Africa, IDRC report, 2018.

Livestock Vaccine Innovation Fund Asia Scoping Study: Situation Analysis of Vaccine Usage by Smallholder Wo/Men Farmers In Bangladesh, India, Indonesia, Myanmar, Nepal and Vietnam, IDRC report, 2018

6. List of Participants LVIF Gender Working Group

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